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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,373

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EXAMINER

RICHER, AARON M

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,373	Applicant(s) OGASAWARA ET AL.	
	Examiner AARON M. RICHER	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-23,25-63,65 and 66 is/are pending in the application.
- 4a) Of the above claim(s) 10,12,14,16,17,20,22,38-63,65 and 66 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11,13,15,18,19,21,23 and 25-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the 35 USC 103 rejections of the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 11, 15, 18, 23, 25, 26, 31, 33, 34, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gruzdev (U.S. Patent 6,868,179) in view of Curry (U.S. Publication 2004/0051908), Sakata (U.S. Patent 5,428,385) and Higgins (U.S. Patent 7,176,935).

4. As to claim 11, Gruzdev discloses an apparatus comprising:

a color correction instrument which applies, to at least one of the pixels, each of a first color correction of increasing saturation of said chrominance signals (col. 7, lines 38-59; saturation is increased by a multiplier in some color ranges) and a second color correction of increasing a white color component of said chrominance signals (col. 8, lines 18-43; in oversaturated color regions, saturation can be reduced, which increases a white component of the color), when a predetermined color component exists in said

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chrominance signals corresponding to said pixel (col. 7, line 60-col. 8, line 17; default color ranges can be specified for correction, such as skin tones, grass, sky, etc.).

Gruzdev does not disclose a saturation height difference for the pixels in said region by assigning each of said first corrected chrominance signal and said second corrected chrominance signal to the pixels of said region according to a predetermined assignment pattern, the predetermined assignment pattern alternating said first and second corrected chrominance signals over one or more said pixels. Curry, however, discloses implementing a saturation height difference by using alternating filters to filter even and odd chroma/saturation of pixels (p. 3, sections 0051-0053). The motivation for this is that not alternating the chroma/saturation can bias an image toward a certain color. It would have been obvious to one skilled in the art to modify Gruzdev to use an alternating pattern of chroma/saturation correction in order to not bias an image toward a certain color as taught by Curry.

Gruzdev does not expressly disclose that increasing or decreasing saturation is done by decreasing or increasing values of at least one chrominance signal. However, it is known in the art that, since CMY and RGB are opposite color systems, if one wanted to increase yellow saturation, one could decrease a blue chrominance value, and vice versa. One example of this principle in action is the Sakata reference. Sakata shows, in fig. 3a and col. 5, lines 6-16, that as colors become closer to white (i.e. R, G, and B increasing), saturation is decreased. Sakata further teaches, in col. 5, lines 17-60, that, for instance, yellow can appear more saturated, and therefore more distinguishable by a viewer, by decreasing a blue chrominance signal. It would have

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been obvious to one skilled in the art to increase saturation by decreasing the value of one or more chrominance signals, and vice versa, in order to distinguish colors from one another as taught by Sakata.

Further, the Gruzdev reference is for writing new RGB values and does not deal with converting such values to four-color values for display or displaying them. Higgins, however, discloses an increasing or decreasing of saturation (col. 5, lines 18-47) and converting to RGBW color space (col. 7, line 54-col. 8, line 3; col. 8, lines 29-50) for display. The motivation for this gamut conversion is to take advantage of a new class of displays (col. 3, lines 34-54). It would have been obvious to one skilled in the art to modify Gruzdev, Sakata, and Curry to take the modified saturation values and convert from RGB to RGBW in order to establish compatibility with advanced display systems as taught by Higgins.

5. As to claim 15, Gruzdev discloses a display apparatus wherein said three primary colors are red, green, and blue (col. 3, lines 7-12; col. 10, lines 52-59).
6. As to claim 18, see the rejection to claim 15.
7. As to claim 23, see the rejection to claim 11.
8. As to claim 25, see the rejection to claim 11.
9. As to claim 26, see the rejection to claim 11.
10. As to claim 31, Gruzdev discloses an apparatus wherein said control instrument performs control so that a chrominance signal which does not include said color component may be displayed without performing said color correction (col. 7, line 60-col. 8, line 17; colors outside the specified range are displayed using a “normal” color

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table), and performs control so as to be displayed in turn spatially, where it is assumed that all the chrominance signals displayed in a pixel of said predetermined region include said predetermined color component (col. 7, line 60-col. 8, line 17; all colors in specific sub-ranges are corrected as it is assumed they have the specific colors that need correction).

11. As to claim 33, see the rejection to claim 15.

12. As to claim 34, see the rejection to claim 15.

13. As to claim 36, see the rejection to claim 11.

14. As to claim 37, see the rejection to claim 11.

15. Claims 13, 19, 21, 27-30, 32, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gruzdev in view of Sakata, Curry, and Higgins and further in view of Okada (U.S. Patent 6,766,052).

16. As to claim 13, Gruzdev discloses a display apparatus wherein a predetermined color corresponds to sky color or skin color, as noted above, but does not disclose an apparatus wherein the predetermined color is yellow, magenta, or cyan. Okada, however, discloses a saturation enhancement apparatus wherein a yellow component has enhanced saturation, since a blue component is reduced in this area (col. 13, lines 14-31). The motivation for this is to emphasize certain character regions of a display (in this case with a "yellow" color) without an unnecessarily harsh display (col. 1, lines 18-26). It would have been obvious to one skilled in the art to modify Gruzdev, Sakata, Curry, and Higgins to increase saturation of a yellow color in order to emphasize certain regions as taught by Okada.

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17. As to claim 19, see the rejection to claim 13. Claim 19 further recites that when said predetermined color is yellow, a second color correction is performed by increasing a B signal of said chrominance signals, when a yellow color component exists in said chrominance signals corresponding to said pixel. This is further disclosed by Okada at col. 8, lines 35-52, which describe a second color correction pattern using a different value, in this case 4, which involves an increase of blue level compared to the other value, which is 5. See figs. 6 and 7 ("yellow" chart) for disclosure of this. Motivation for such an increase/reduction in blue values can be found in the rejection to claim 13.

18. As to claim 21, neither Gruzdev nor Higgins discloses an apparatus wherein said height generation instrument performs the selection of said first chrominance signals and said second chrominance signals using a signal of determining timing when said display instrument performs display in said pixel. Okada, however, discloses using three different correction signals based on a timing signal (fig. 28; col. 22, lines 36-53). The motivation for using such a feature in the Okada reference can be found in the rejection to claim 13.

19. As to claim 27, neither Gruzdev nor Higgins discloses an apparatus wherein said every predetermined plural pixel units is every two pixel units. Okada, however, discloses a control instrument that displays two different correction patterns adjacent (fig. 33a, 33b, 34a, 34b; col. 25, line 27-col. 26, line 38; in the case where a skeleton pixel is adjacent to a non-skeleton pixel, the patterns alternate), which would read on a predetermined two pixel unit pattern. The motivation for using such a feature in the Okada reference can be found in the rejection to claim 13.

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20. As to claim 28, none of Gruzdev, Sakata, and Higgins discloses an apparatus wherein in the case that said control instrument performs control so that said first chrominance signal and said second chrominance signal may be displayed spatially in turn in every predetermined plural pixel units, which are horizontally adjacent, in said predetermined region, said control instrument switches and selects said first chrominance signal and said second chrominance signal in every said predetermined plurality of dot clock signals for determining display timing of every pixel in said predetermined region. Okada, however, discloses a control instrument that displays two different correction patterns horizontally adjacent (fig. 33a, 33b, 34a, 34b; col. 25, line 27-col. 26, line 38; in the case where a skeleton pixel is adjacent to a non-skeleton pixel, the patterns alternate). Okada further discloses that patterns are switched every predetermined number of dot clock signals, as noted in the rejection to claim 21.

Motivation for inclusion of such features can be found in the rejection to claim 13.

21. As to claim 29, see the rejection to claim 28. Claim 29 recites similar limitations but uses vertically adjacent pixels rather than horizontally adjacent pixels. It is noted that if a skeleton pixel is vertically adjacent to a non-skeleton pixel in the Okada reference, the patterns will alternate, much as they would for horizontally adjacent pixels.

22. As to claim 30, see the rejection to claim 21.

23. As to claim 32, see the rejection to claim 13.

24. As to claim 35, see the rejection to claim 19.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON M. RICHER whose telephone number is (571)272-7790. The examiner can normally be reached on weekdays from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron M Richer/
Examiner, Art Unit 2628
10/15/09